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THE Pacific Pharmacist

An Independent Journal Devoted to Progressive Pharmacy

Vol. 11

DECEMBER, 1917

No. 8

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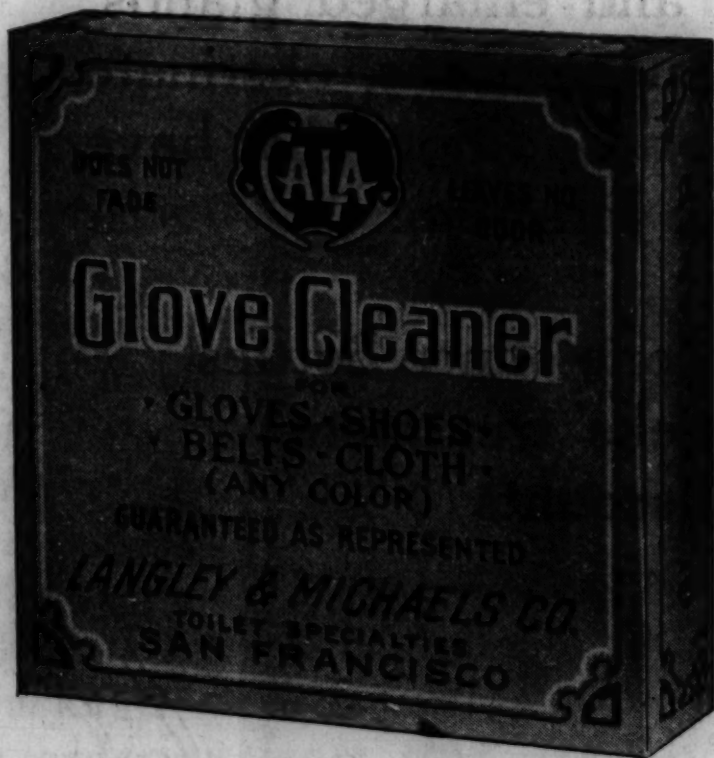
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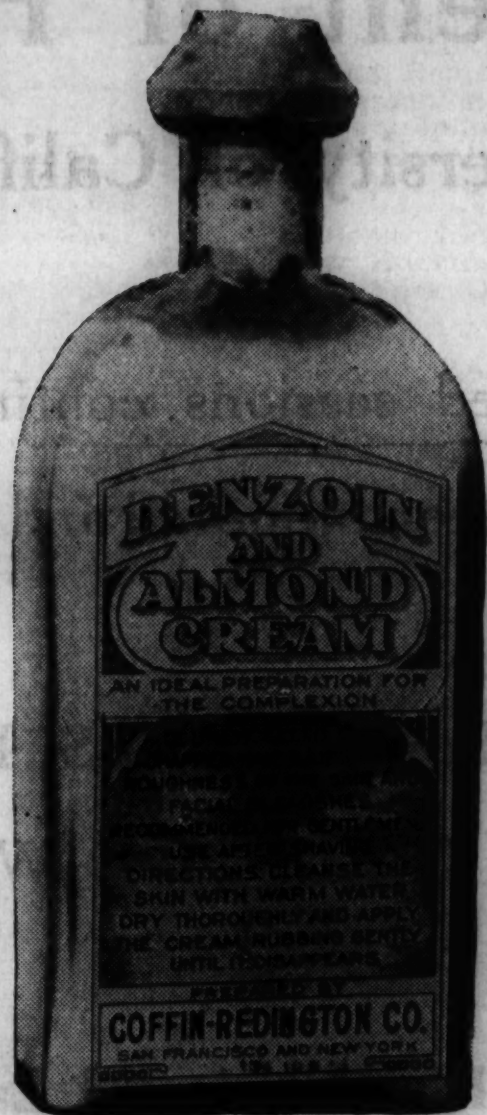
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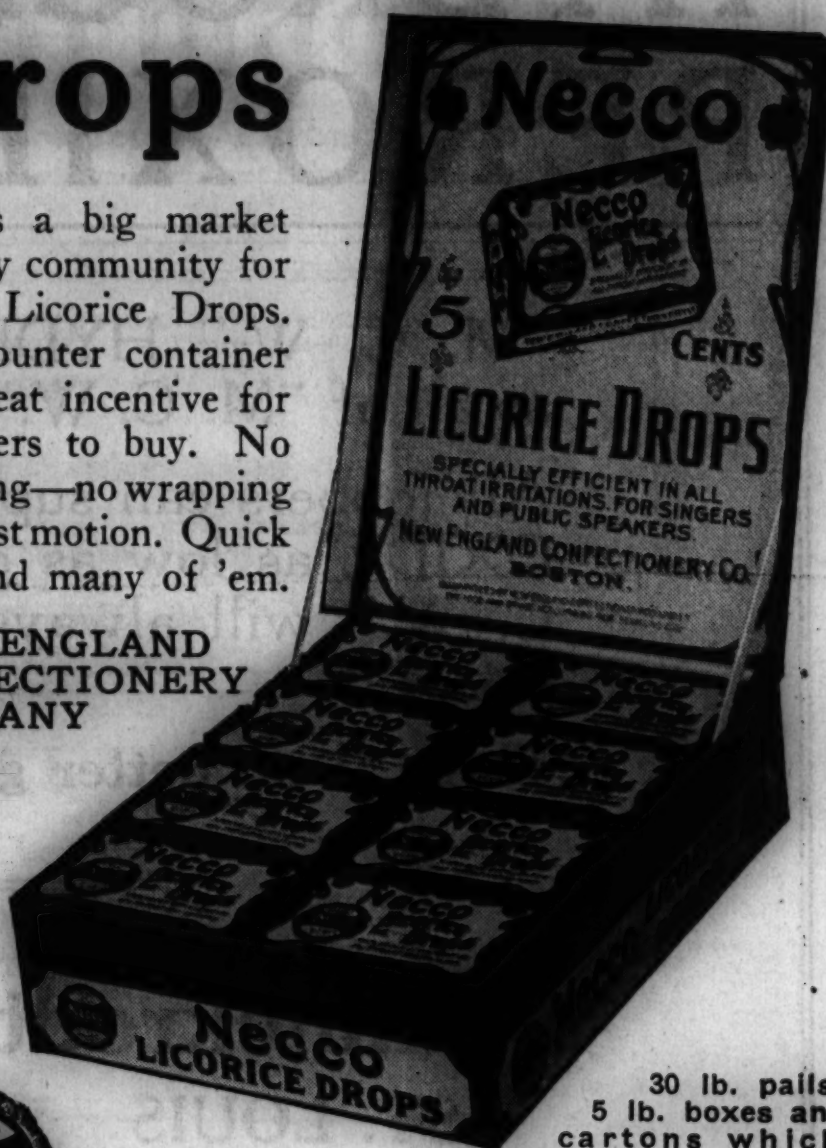
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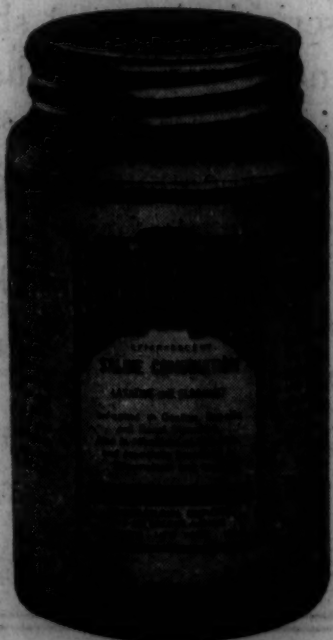
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THE Pacific Pharmacist

An Independent Journal Devoted to Progressive Pharmacy

Vol. IX.

DECEMBER, 1917.

No. 8.

Published on the Fifteenth Day of the Current Month on behalf
of the Pharmacists and in the interests of the Drug Clerks.

H. B. CAREY, Manager

Editorial Staff:

R. E. WHITE

J. H. DAWSON

H. B. CAREY

F. W. DESSEL

Address all communications and make all checks and money orders payable to The
Pacific Pharmacist, 1294 Ninth Ave., San Francisco, California.

Communications on questions pertaining to Pharmacy and the Drug Business are
solicited. The name of the writer should accompany every article, not necessarily for
publication, but as a guarantee of good faith.

EDITORIAL

SEASON'S GREETINGS.

This is the time of the year when we look back and review our accomplishments. It is also the time of the year when we are inclined to be broad and considerate of all the shortcomings of ourselves and our friends.

THE PACIFIC PHARMACIST takes this opportunity to extend the season's greetings to its many friends. During the year we have added many new subscribers and have made many friends. THE PACIFIC PHARMACIST wishes to especially thank the advertisers who as a class represent the cleanest and the best in the profession. We heartily commend our readers to patronize them and encourage them in the efforts which they are making in the field of honest endeavor. These business firms, like all the rest of us, have had many trials and tribulations because of the unsettled business conditions throughout the world, and they have faced these trials and tribulations unflinchingly and are still capable of giving the same high class service as in the past.

To our many readers we also express the greetings of the year, and we sincerely hope that we may be better able to serve in the year to come.

May naught but joy and happiness meet you on every turn in the New Year. May prosperity and success greet

you everywhere in 1918. With these sentiments THE PACIFIC PHARMACIST wishes all its friends a Merry Christmas and a Happy, Prosperous New Year.

SALE OF ALCOHOL.

This subject is one of the nightmares troubling druggists, as every few days a different regulation comes along, hence no one can be an expert on the subject. We wish, however, to mention a few points.

The wholesale houses of Langley Michaels Company and Coffin Redington Company of this city have been sending out full instructions of the latest interpretation telling the retailers just how to go about the matter in a legal way. Your wholesale house will furnish full instructions. Because of the uncertainty of the rulings and the frequent change "The Pacific Pharmacist" will not attempt to give all of the details connected therewith.

From now on to handle non-beverage alcohol you must furnish an accepted bond to the Internal Revenue Department. The druggist is then given a permit to handle a definite quantity in proportion to the size of his bond. Remember you must comply with the law if you wish to sell

a single ounce of alcohol without a physician's prescription.

Having complied with the above requirements under Treasury decision 2559 you are then permitted to sell alcohol in quantities not exceeding one pint having first medicated the alcohol, making it impossible to be used internally (formulae for making it a non-beverage will be furnished on application; formaldehyde one part and alcohol 250 parts seems to be the preferred formula). The bottle containing the alcohol then must carry a poison label.

Remember the law is now enforced. The wholesale houses have gone to much labor and expense in furnishing advance information to pharmacists and we trust the retailer fully appreciates the labors.

SOCIALISM IN ENGLAND.

According to a press report a bill will shortly be presented in Parliament creating a Ministry of Public Health. The scheme is "revolutionary in character," involving free medical attention to every one without any element of charge. If this scheme is carried out Russia has nothing on England in the line of socialism. The change for pharmacists and physicians will not be great, simply from voluntary slavery to that of involuntary slavery.

We recommend that physicians seriously consider the "absent treatment" method before registering under the new law.

THE INVENTORY.

It is now time for us to make plans for the beginning of the New Year, and in these we should include our annual inventory. If the pharmacist is to succeed at the present time he must know absolutely where he stands financially. Guessing won't do. Excuses are for naught.

With the continuously fluctuating

prices it is absolutely imperative that the stock be completely remarked every few months if we are to carry on our business in a progressive modern fashion. It is also of great legal importance to have a complete inventory at least once a year, in case of fire or destruction of the stock. This is the only practical and legal document which we have to show in making claims for adjustment.

It has occurred to us that this inventory-taking might better be made by some responsible disinterested party. It surely would have more legal significance and weight with credit and insurance companies in case any accident were to occur. If this item of expense is too great why could not the Retail Druggists' Association hire a responsible firm, at a reasonable price, to take the inventory of all the members in this association? The time could be rated at so much per day, or so much per hour. The people who make a business of doing this kind of work get to be very expert and fast. In our opinion, it would be much cheaper to hire expert people of this kind than to try to do the work with inexperienced and non-skilful help. We believe the Retail Druggists' Association may well consider some systematic scheme of this kind for getting effective skilful services of a kind that will not be questioned in cases of legal importance.

FAIR PRICES.

Above all things, keep alive to the ever changing prices. THE PACIFIC PHARMACIST has continuously urged pharmacists of the importance of keeping posted. We believe many pharmacists have been negligent to their own misfortune. The filling of prescriptions at the prices asked four years ago is an absurd and ridiculous thing calculated to injure the drug trade and the profession generally, as well as bringing great financial loss to the compounder. Within the last year we have actually known of instances of this kind.

A MENACE.

Few of us perhaps fully realize what a great pest and menace is the common house fly. This is the time of the year, in the Pacific Coast States particularly, where great effort should be made to destroy every fly possible. Every one of these pests destroyed this time of the year means the equivalent of the destruction of hundreds of thousands next summer. The amount of money lost in food waste and disease directly traceable to these pests would be appalling to the average man. At the present time more than ever before, the greatest possible effort should be made to prevent the waste of food, and disease caused by these pests.

We believe it of great public benefit to call attention to the people of the importance of destroying house flies at this time of the year.

CHRISTMAS SHOPPING.

This year perhaps more than any within our memory the Christmas shopping will be something of an uncertainty. We believe the pharmacist should be well stocked with useful and valuable articles and we believe he should make a special effort to emphasize the importance of buying useful and worth while gifts. If the display windows are properly prepared we believe the public will fall in line very readily on this subject and thereby perform a double service, helping the druggist and at the same time helping their friends who receive these gifts.

TAXATION LAWS.

There seems to be no relief in sight for the unfortunate druggist in regard to these laws. As the next session of Congress is about to grind out more law it behooves the pharmacist to sit-up and take notice lest the taxation burden

which he is forced to meet will put him out of business. Undoubtedly, there will be all sorts of ways and means proposed for revenue, and the druggist surely will come in for more consideration. We sincerely hope that they may overlook the unfortunate druggist in the newly proposed Taxation Laws. He surely is already well burdened. Taxation Law is a convenient method for getting money—mostly from the other fellow. It behooves the pharmacist to get busy and see that he is not the other fellow all the time.

ARSPHENAMINE.

Under this title the Federal Trade Commission has authorized the manufacture in this country of the substance formerly known as Salvarsan. The Commission has authorized three firms in this country to manufacture the substance under the above name.

It is said that the Commission has not definitely settled upon the price to be charged, but that the firms authorized to make it have agreed to make the price \$1.00 per dose for the Army and Navy, \$1.25 per dose for hospitals and \$1.50 per dose for physicians. The Federal Trade Commission have authority to fix the price at any sum which they see fit. If the drug is successfully made and marketed at the above prices it will be a very great assistance to the medical profession. Before the war the price per dose was about \$3.50, and after the war began speculators were able to sell it as high as \$35.00 per dose. This made the price practically prohibitive to a large class of patients who badly needed the drug.

We believe this is the first important drug to be manufactured as the result of the Enemy's Patent Act. A large number of other drugs the patents of which are held by the enemy will shortly be manufactured in this country under the supervision of the Federal Trade Commission.

SCIENCE NOTES.

According to Baldwin, writing in the Interstate Medical Journal, Nitrous-Oxide-Oxygen is by no means the safe anesthetic which has formerly been claimed. He agrees with Dr. Ochsner of Chicago, who suggests that it should be limited to acute pulmonary congestion and nephritis. He recites that many hospitals that formerly used it are swinging back to ether, a safer general anesthetic.

Scarlet R Ointment, according to Kirkpatrick, in the Medical Gazette, is distinctly beneficial in some kinds of conjunctival and corneal injuries. This drug has long been recognized for its ability to encourage the development of epithelium cells. It is only lately that it has been used in ophthalmic surgery.

Mercurialized serum is poisonous in proportion to the amount of bichloride of mercury present. According to Pittenger, writing in the New York Medical Journal, the intramuscular or subcutaneous injections of mercurialized serum are practically painless and usually are not followed by sloughing as in cases of injections of the plain bichloride.

Treatment of Burns.

According to the British Medical Journal, the paraffin treatment of burns was introduced by Dr. Barthe de Sandfort, who used a proprietary article called "ambrine." Lieutenant-Colonel Hull recommends the following:

Betanaphthol		0.25 per cent.
Eucalyptus		2.0 per cent.
Olive oil		5.0 per cent.
Hard Paraffin		25.0 per cent.
Soft Paraffin		67.75 per cent.

Colonel Hull recommended that it be applied with a camel-hair brush sterilized in wax. The "ambrine," however, was used with a spray simi-

lar to a strong atomizer. Of course, the temperature must be so that it keeps the paraffin at the melting point, namely 50° C.

Happel in the Medical Record, states that the extract of corpus luteum is specific in the treatment of headache following menopause. However, the drug must be given over a considerable period of time. It is also said to be of great importance and value in the treatment of irregular and scanty menstruation.

Intravenous injection of sodium bicarbonate in treatment of chloroform poisoning has been practiced at the Darlington Hospital. It is said to be worthy of trial in serious and possibly fatal cases which have lapsed into coma.

GLYCERINE AND ANTISEPTICS.

According to Goodrich, in the British Medical Journal of May, 1917, glycerine with water increases materially the solubility of many of the common antiseptics. However, there appears to be no advantage in this since a far weaker aqua solution is equally or more effective as an antiseptic. The writer uses thymol and phenol as illustrations and gives facts and figures in their behavior with bacteria.

It has long been known that glycerine has some antiseptic qualities but they are more effective against animal cells (protozoa) than against bacteria. The explanation of this is in the cosmetic action. Diluted solutions of glycerine are sometimes used to favor the growth of bacteria.

The conclusion is reached that it is largely a waste of glycerine to make use of it as a solvent or antiseptic and that preparations containing it for antiseptic properties may with propriety be omitted from the Pharmacopoeia.

THE CULTIVATION OF BELLADONNA IN CALIFORNIA.*

By ALBERT SCHNEIDER.

(Continued from November.)

6. *The Botanical Relatives of Belladonna.*—Attention has already been called to the fact that the common deadly nightshade, *Solanum nigrum*, has been mistaken for belladonna. Within recent years attempts have been made to use the leaves and rhizomes of *Scopola* (*Scopolia*) *carniolica* as a substitute for belladonna, but these efforts were without success. *Scopola japonica*, also known as Japanese belladonna, is said to be identical with *Scopola carniolica* as to constituents and physiological action. Other species of *Scopola* have been tested as possible substitutes for belladonna but have not met with favor among physicians. The *Scopolas*, the potato, the tomato, the tobacco and the well known drug plants *Hyoscyamus niger* (Henbane) and *Datura stramonium* (Jimson weed) all belong to the nightshade family (*Solanaceae*). The common potato (tuber of *Solanum tuberosum*) contains a poisonous alkaloid (solanine), present in the peel of the young tuber. It is highly irritating to the eyes of those engaged in peeling potatoes, for example. The amount of this alkaloid present is slight and is destroyed by heat, as in baking or boiling.

III. BELLADONNA CULTURE IN EUROPE.

1. *England.*—Belladonna and other drug plants are quite extensively cultivated in different parts of England. These drugs are of superior quality and while most of the supply is taken by the home market a portion of it is imported and used by leading pharmacists, wholesale and retail, of the United States. Naturally, the price of these drugs of superior quality is higher than of inferior quality drugs. For example, if the leaves from wild growing belladonna are offered for twenty-five cents per pound, the leaves from cultivated plants will bring from seventy-

five cents to a dollar per pound. Since the beginning of the European war the price of belladonna and also of most other drugs has advanced very decidedly, and some importations have ceased altogether.

2. *Germany, Austria and France.*—The belladonna grown in these countries is also in the main of superior quality and largely retained for home use. However, up to the beginning of the war large quantities of belladonna were imported from Thuringia (Austria). It was as a rule inferior to the German or English cultivated product. Some of it was from cultivated and some from wild growing plants.

3. *The Mediterranean Countries.*—Most of the belladonna used in the United States is from Spain, Italy, and other Mediterranean countries. Also most of it is from wild growing plants and is of a decidedly inferior quality, much of it being below the minimum U. S. P. requirements.

IV. BELLADONNA CULTURE IN THE UNITED STATES.

It is difficult to ascertain when and where the first attempts to grow belladonna in the United States were made. F. B. Kilmer, chemist for the firm of Johnson and Johnson of New Brunswick, New Jersey, was perhaps the first to make the more extended trials. The plantings to date, all rather experimental in character, are limited to certain small areas in two or three of the eastern states and to California.

1. *Eastern United States.*—In 1899, F. B. Kilmer brought some belladonna roots and seed from Europe, planting some in his own garden near New Brunswick and some in the Bellevue Gardens of R. W. Johnson, president of the firm of Johnson and Johnson. The experiments were continued for two or three years in different soils to which were added various fertilizers. In 1904, the experimental plantings were increased to fifteen acres, containing from one hundred and fifty thousand to two hundred thousand plants. The method adopted was to start seeds

in beds and in boxes, in the month of February, and transplant the seedlings to the open ground, in May. The attempt to seed directly into the open field proved a failure. The plants matured late in September. The crop was hand-picked, and various methods of curing, handling and packing were tried out. It was found that the maximum alkaloidal yield of leaves and stems developed at the time when the berries began to form and, as the plant grew older, the alkaloidal content of the root increased. Rapid drying maintained the green color of the leaves whereas slow drying produced a marked browning. Under the process of sweating and drying the green color disappeared entirely.

These experiments also demonstrated that the plants did best in good loam, rich in lime. The tops were killed by the first frosts, and the entire plant was killed during the winter. This naturally made it necessary to take up the roots, with the crowns, in October, and store them against freezing. The larger crowns were divided into from two to four parts and transplanted in the spring (early May).

John A. Borneman, of Philadelphia, also made some experiments with belladonna and secured results similar to those obtained by Kilmer. He, however, declared two crops could be gathered in one season, one in July and one in October. One acre of belladonna yielded from six to eight thousand pounds of green material. He also noted that home grown seed germinated better than the imported seed.

John R. Rippetoe, of New York City, made some tests with belladonna in New York and also in the Shenandoah Valley, Virginia. Experimental belladonna plantings were made by R. H. True, in charge of drug investigation in the Bureau of Plant Industry in the Department of Agriculture; by Henry Kraemer, of the Philadelphia College of Pharmacy; by E. L. Newcomb, of the Department of Pharmacy of the University of Minnesota, and several others.

The California Experiments.—The

California experiments are especially interesting; first, because of the rather wide range of experience which they represent and, second, because the details of the successful commercial growing of belladonna have been fully worked out. It is, therefore, desirable to relate these experiences in detail for the benefit of those interested in the commercial growing of this drug.

In 1903, some belladonna plants were started in the garden of medicinal plants* in Golden Gate Park, San Francisco. The soil in which this belladonna was grown is "made soil," consisting of loam which has been hauled in and mixed with the sand which formed the base of Golden Gate Park. This belladonna received but little care, yet it thrived well. The second year's growth made its appearance in late January, and the young shoots were not injured by a slight frost. The third and fourth years' growth were better than the growth of the second year. Several dried samples of stems and leaves submitted to Johnson and Johnson (F. B. Kilmer) for analysis showed a high yield of alkaloids. Analyses made at the California College of Pharmacy showed the same high yield, ranging from 0.40 to 0.82 per cent. in the leaves and 0.50 per cent. in the stems, as given by Kilmer.

In 1906, arrangements were made to carry on tests with belladonna at the experimental gardens of the College of Agriculture of the University of California, under the direction of R. E. Mansell, in charge of the field experiments. Cold frame seeding was done in December, 1906, and about 200 young plants were transplanted in the month of May, 1907, into rather poor, inadequately prepared soil (clay, adobe and gravel), on top of a ridge. This soil was hard and dry and there were no arrangements for irrigating. Naturally the plants made a very poor growth and many were killed by droughts and weeds. Those that survived flowered in August. In Decem-

* This garden was abandoned later, due to the lack of funds necessary for its maintenance.

ber, 1907, some of the surviving plants were transplanted into another plot in which the soil was even poorer than in the one from which they were taken, and not one plant survived the season of 1908, a season of very light rainfall. These tests demonstrated that unless belladonna is well rooted at the time of transplanting (December to March) it cannot survive the dry season (May to early December), without irrigation. The experiments also proved that after the plant is once well rooted it is highly resistant to drought.

In 1906 and 1907, some tests were made by the writer in a small garden at Salinas, California. Seeding was done in the open, in January (January fifteenth), 1906, and the first seedlings appeared on the second of March. The soil was of the adobe variety, well fertilized with old stable manure, and well cultivated. The rainfall of the season was heavy. The plants made an excellent growth, flowering in July. This plot also received a top dressing of lime at the time of seeding.

Other small plantings were made at Ross Valley, by F. A. Hund, and at Los Angeles by George A. Hill, and another, by B. Phillips, at Alameda.

The sum total of results from the small experimental plantings above referred to led to the conclusion that certain areas of the coast region are peculiarly suited to the growing of belladonna.

In 1907, arrangements were made

with the firm of Johnson and Johnson, through their representative F. B. Kilmer, to conduct some belladonna tests on a commercial scale. The writer, with the cooperation of Mr. Kilmer, was asked to make all arrangements for these tests. During the months of July, August and September of the year referred to, the Salinas Valley, Pajaro Valley, Santa Clara Valley and the San Francisco Bay regions were visited, comparing climate and soil. After careful deliberation a tract of thirty-two acres in the Castro Valley, near Hayward, Alameda County, was selected. The soil of the chosen plot was a rich medium adobe and sedimentary loam, uniform in quality and not much overrun by weeds (the morning glory being the most noticeable among them). Big crops of tomatoes had been grown in the field for two years preceding. The average seasonal rainfall for this small valley is about 20-22 inches. The surrounding low hills give some protection against the coast winds and also add to the soil moisture by slow seepage.

The following is a brief synopsis of the cultural operations for the season of 1907 and 1908:

Plowing was begun as soon as the first rains had moistened the soil sufficiently (December fourteenth to twenty-fifth). A double disc plow was used, going to a depth of nine inches. The soil was then double-disced and double-harrowed. On December seven-

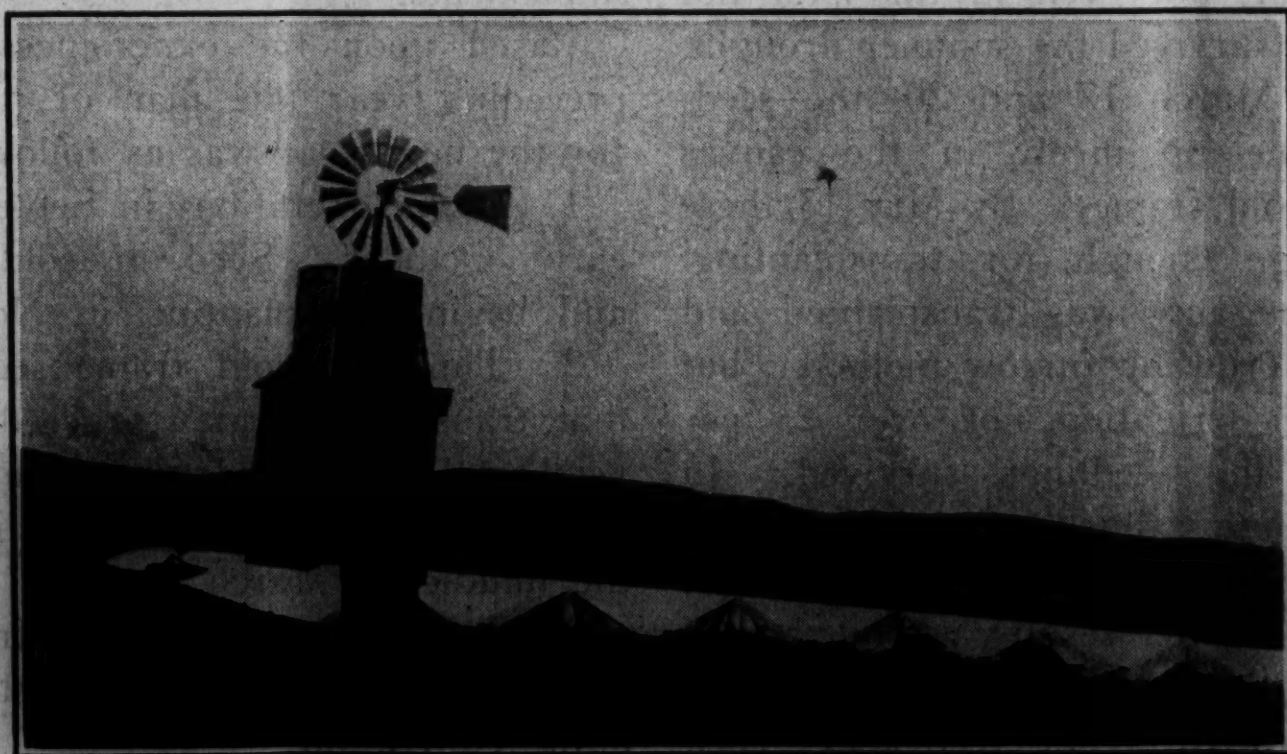


Fig. 1.—Canvas-covered Cold Frames (6x60 ft.) Into Which Belladonna Seed Has Been Planted.

teenth, seeding was begun. A No. 5 "Planet Jr." seeder was used, set to drill about $\frac{3}{4}$ lb. to the acre; seeding to a depth $\frac{1}{2}$ inch, in rows three feet apart. The preparation of the soil and the seeding were continued as the rains and the soil conditions would permit. From January eighteenth to February eleventh, there was more or less rainfall every day and all field operations were discontinued during that period. By February eighteenth the seeding was completed.

A careful examination of the field, some seven weeks later, made it only too evident that the seedlings would not be able to force their way through the soil top-crust and in the meantime weeds, as mustard, California poppy, chickweed, burr clover, etc., developed luxuriantly. In the entire area seeded not a thousand seedlings made their appearance, and arrangements were made at once to reseed and retill the entire field. This was done from February 19 to March 9. In addition, three canvas-covered cold frames (6x60 ft.) were seeded on February 16 and 17, and March 3, about 1.5 lbs. of foreign seed per frame being used.

As was half anticipated, based upon addition, about three acres were planted, following the procedure of tomato seedlings made their appearance, but the prospects were so discouraging that the entire field seeding was abandoned, excepting a small area of about one acre. This was cleared of weeds by hand labor, but even in this plot not one plant survived the summer drought.

About March 17 and 20, the seedlings came up nicely in the canvas covered cold frames. By May 13, these were large enough for transplanting. About one acre was transplanted and irrigated (row or furrow method), but even with irrigation not over 25 per cent. of the seedlings survived. In the complete failure of the first field seeding, the second seeding did not yield much better results. A number of transplanting, that is, the seedlings were put out in rows six feet apart each way. A small hole was dug, a quart

of water poured into the hole thus made and mixed with dirt into which the seedlings were planted. Not a single plant survived. It was very evident that belladonna seedlings were far less resistant to sunshine and drought than tomato seedlings. Most of the young plants were left in the cold frames, kept free of weeds and occasionally irrigated. They made an excellent growth during the summer, most of them developing good roots.

The entire commercial experiment above outlined can be summarized as a complete failure, so complete in fact that if the writer had not had previous experience with belladonna culture he would have declared it a waste of time and money to make further attempts.

The reasons for the failure are as follows:

1. Unfavorable weather conditions. The season was chilly, rainfall deficient, dry winds and very little fog.
2. Slow germination of seed, the packing of the soil and top-crust formation, together with the slow growth of the seedlings make *field seeding wholly impracticable*.
3. The cold frames were started too late. It was not intended to use cold frames as it was hoped that field seeding would prove at least partially successful.
4. To the above causes must be added lack of experience, inability to secure dependable field labor, and also more or less unsuitable tools and farm implements.

Based upon the experiences of the preceding year, the plan of procedure for the next year was as follows:

1. Begin operations in September or early October. Seed in cold frames and begin transplanting in November.
2. Time the cold frame seeding so that transplanting may proceed in November, December, January and February. Transplanting to be completed by the middle of March.
3. The field must be kept free from weeds by hand labor, as well as by horse cultivation.
4. Seeding directly into the field

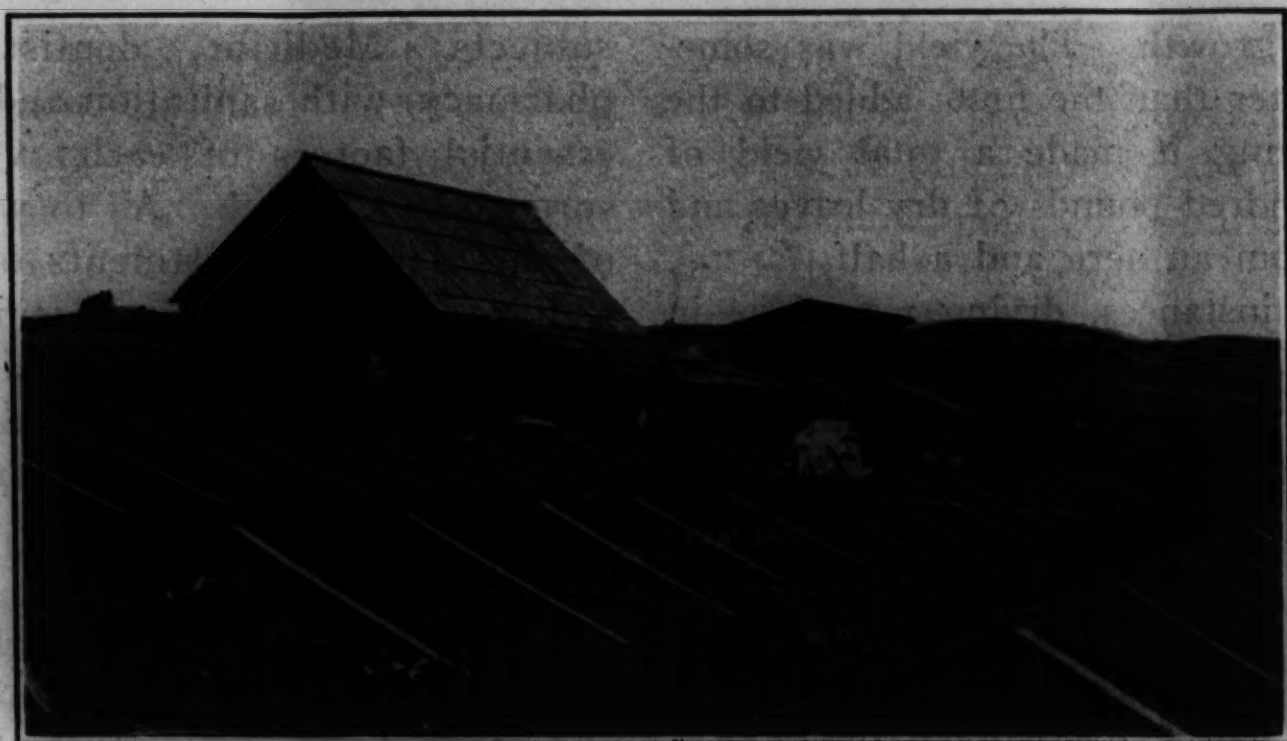


Fig. 2.—During the Spring and Summer the Cold Frames are Uncovered.
Note that the Beds are Filled with Seedlings.

found to be impracticable and must be abandoned.

The seed (in the field during the months of December, January and February) requires at least eight weeks to germinate. Within that period of time weeds grow and the field must be kept clear largely by expensive hand labor. Furthermore, the tests of the previous year demonstrated conclusively that the seedlings cannot force their way through the soil top-crust.

5. Summer irrigation (June and July) to be tried.

6. Japanese labor to be employed by contract. Japanese day labor proved expensive and unsatisfactory.

From August 18 to October 18, 1908, sixteen cold frames (each 6x60 ft.) were prepared and seeded to belladonna. The time required for a goodly number of germs to appear varied from six to ten weeks and even longer. Cut worms killed most of the seedlings in several of the frames. During the winter months the young plants made very little growth. From December 9 to December 25, the weather was unusually cold for the San Francisco Bay region, the temperature falling below 27° F. on two or three occasions. Some of the leaves of the young plants were killed, but the roots remained in good condition.

On November 28 and 30, 1908, some of the plants from the cold frames were transplanted (one acre), the soil being in excellent tilth. About Febru-

ary 28 three acres were transplanted, taking the larger plants from the sixteen cold frames above mentioned. It soon became evident that these would not succeed in developing adequate root systems by the time the dry season would set in. With special care, perhaps 30 per cent. would survive, but as this was not thought worth while the three acres were abandoned about March 22, thus leaving only the acre and a half of belladonna in the field. It was decided to leave the remaining seedlings in the cold frames, caring for them properly, and transplanting in the succeeding November, by which time the roots would be well grown and hardy. The sixteen cold frames now held about 200,000 thrifty plants, enough for twenty to twenty-five acres of belladonna for the season of 1910.

The belladonna in the field began to show buds in late January, 1909, and by May 15 the second year plants (transplanted May, 1908) were ready for the first harvest. In June the plants of one season's growth (transplanted November, 1908) were ready to cut. The yield was light because of the unfavorable season, little or no rain since the latter part of February. On July 15, three hundred and fifty-five pounds net of perfectly dry and brittle belladonna were shipped to Johnson and Johnson. This represented the total yield of the first crop from one and a half acres. On July 22, the second crop was cut from the plants of two

seasons' growth. The yield was somewhat better than the first; added to the first cutting it made a total yield of eight hundred pounds of dry leaves and stems from an acre and a half.

In all instances, drying was done in the open. The leaves dried quickly, in three to four days, while the stems required from four to six weeks to become thoroughly dry. In this time some of the leaves were of necessity lost.

The details of drying, packing and shipping had to be worked out. Drying in the sun and baling like hay was found to be, under the circumstances, most suitable for stems and leaves.

In the fall of 1913, the experimental efforts were transferred from the Castro Valley to San Leandro, near Oakland. About one half acre of roots (crowns) were planted in the field and forty pounds of California grown seed were seeded into large canvas covered cold frames. Through lack of care of the seed beds not over one sixth of this seed germinated and more than half of the seedlings which made an appearance were allowed to die through neglect. In the fall of 1914 another half acre of roots (one year old seedlings) was planted and at the present writing there is in all about one acre of thrifty plants in the field.

Numerous experiments have been made with a view to hastening germination, but without marked success. Macerating for two hours in concentrated sulphuric acid shortened the period by several days. Macerating in water from one day to a week appeared to have no very marked effect. Soaking in boiling hot water several minutes appeared to hasten germination somewhat.

(To be continued.)

THE TRIPLE ALLIANCE IN MILITARY MEDICINE.

(By J. Madison Taylor, M. D., Prof. of Applied Therapeutics, Temple University, Philadelphia.)

The domain of military medicine is a blend of three major components or

subjects: Medicine, dentistry and pharmacy, with sanitation and hygiene essential factors of each; veterinary surgery is a branch. As to which one of these three departments of human welfare effort shall be esteemed paramount, there may be justifiable variants of opinion. There can be no question but each is on a practical par with the other in the objects they aim to achieve.

The first line of defense is the Medical Corps for the reason they it is who pick the fighting men as no others can. Without this critical selection there would come together a mere herd of dubious candidates—most expensive by reason of potential defectives and dependents. The second line of defense we may safely claim is also the Military Surgeons because theirs is the responsibility of putting these men in conditions of highest efficiency, of keeping them there, of forefending them from all preventable decrepitudes, of repairing them when damaged and of restoring them to the trenches, of reducing to a minimum their dependence upon either the Government pay rolls or the public charge. Can you beat that for a man's sized contract?

In the process of preventing the preventable depreciation of life and vigor and fighting power, in Medical Corps must qualify as ceaselessly vigilant, first-class experts in testing all suspicious objects, sources of lurking perils among which are drinking water, foods, soils, infective agencies, environments, climates, dwelling or sojourning sites whether outdoors or indoors or in a ship. There is included demand for expertness in chemistry, in bacteriology, in all the departments of clinical laboratory proficiencies. The time and strength and multitudinous demands made on the surgeon, notably in time of active participation in war, bring him to the verge of overstrain and then he absolutely must have expert help because he cannot do it all and act as administrator beside.

Frankly the development of military medicine has long outgrown the archaic and wholly unsatisfactory methods and practices of even as late as 1898 and demands complete readjustment in certain particulars.

The one outstanding deficiency is in the domain of expert pharmacy. All demurrers, all hesitation to supply full quota of modern pharmacists can be met by making clear what he is now uniformly trained to supply, viz.: expert knowledge in physiologic and pathologic (medical) chemistry, proficiencies in laboratory tests of urine, feces, gastric contents, of blood Wassermann, Widal, etc., and transfusions of blood, intravenous treatments, surgical dressings and diverse allied subjects and facilities; also examination of drinking water, foods, soils, localities, drainage, details of sanitation, also in diverse clinical laboratory manipulations at least as to details of matters to which the surgeon may be wholly unable to do justice.

There is, therefore, fullest justification for a triple alliance between surgeons, dental surgeons and expert pharmacists; otherwise the practical efficiency of the fighting, the executive and the financial personnel, must indubitably and seriously suffer.

The status of pharmacy as a profession in this country lacks much of what it deserves largely through the neglect or apathy of the profession of medicine and one reason is the crass commercialism which still lingers in her territories. Now pharmacy is just as much a profession *per se* as any other high class industry progressing on a plane of lofty ethics and strict scientific conditions.

Pharmacy is as full a correlate of medicine as is dentistry or veterinary surgery, and her proponents are qualified to enjoy full recognition of the military and other bureaus. And yet today the medical profession, or corps, in the military service, fails to give scientific pharmacy that just encour-

agement and support essential not only for its best growth and development but also for acting as the cordial handmaid, contributing to the solidarity of medicine as a whole.

Not more so-called pharmacists are needed in the service but **real ones**, trained in the full scientific, as well as practical methods now demanded of students in the better schools of pharmacy. Indeed the use of drugs has notably diminished of late because of the increasing efficacy of preventive and reconstructive measures.

The number of drug stores, apothecary shops or pharmacies are rapidly becoming more numerous than needed, yet they are of much use and the proprietor must live, hence the temptation to deal in nostrums and blatantly overpraised objects correlated with remedies. The correction of abuses it would seem might be effected by a greater sympathy and mutual appreciation of the domain of each, especially when the pharmacist is called upon more to exercise his skill as chemist, analyst, laboratory clinician and in other ways to co-operate in the day's work of the physician. The scientific spirit among pharmacists is absorbing attention, devotion and increasing personal sacrifices with great speed and force.

My interests in therapeutics are in other measures than drugs, yet for years I have been impressed by the splendid research work that the American Pharmaceutical Association has been doing for our benefit, quietly, unobtrusively, honestly and practically unknown to the medical profession. This is set forth candidly in the annual report on the progress of pharmacy in its exceedingly able *Journal*; also the research work of the splendid *American Journal of Pharmacy* for nearly a century past; these publications embracing thousands of pages of scientific matter better known and appreciated in foreign countries, I believe, than it is in our own.

It seems to me that the time has

come for full correlations in which the medical profession should do all in its power to get shoulder to shoulder with its sister professions. The first step could well be that advocated by the *Journal of the American Medical Association* when it urges the recognition of pharmacy as a profession by the Medical Department of the United States Army and Navy. Such a recognition would go a long, long way toward placing the practice of pharmacy in this country in a satisfactory position to the world and to demonstrate its effectiveness.

What stands in the way? Apparently the attitude of the Surgeon General of the Army who has expressed himself as opposed to the recognition of professional pharmacy in the Army as being "unnecessary" and second, that if recognized it might necessitate the manufacture of medicinal preparations by Army pharmacists, and this would "offend" the large manufacturing pharmacists of the country who furnish the medical supplies. The Surgeon General is a man of deep penetration; in this instance, however, he has not given the subject the attention it deserves. When he does he will be more liberal and appreciate the present status.

It is claimed little or no place exists in military medical practice for the use of drugs, that the vital issues are surgical and sanitarial, and that drugs "if" (or when) needed, can be met by the use of "ready to use" products, tablets and the like, conveniently handed out by physicians, or by privates with little or no special training.

The answer to this is, of course, that proper results in clinical work cannot be attained without proper and adequate tools. One might as well urge that the Army surgeon should use "first aid packets" only in the surgical handling of the wounded, as to say that the military surgeon should be supplied only tablets for the treatment of diseased conditions.

The men of the trenches, God bless them, are entitled to the best possible

pharmaceutical skill as well as other skill when ill, fully equivalent to what is available in civil life. Less than this is rank injustice or worse.

In normal times the fighting man, it is true, requires little medical treatment, and, also, probably during the first year of a war, but when bodies of our boys are wrecked and being repaired surgically, however skillfully done, diseased conditions supervene. In a short time all army hospitals will be filled to overflowing, not only with surgical, but also with medical cases demanding highest medical skill to reclaim. Why then should not our men have the best pharmaceutical skill to make more effective medical skill?

So far as the second objection of the Surgeon General is concerned, Editor Mayo of the *American Druggist*, is in the right when he says there is no foundation for the fear expressed of venality. The first-class manufacturing pharmacists of this country are as patriotic as any other group. The amount of Government business they receive, in comparison with their general and regular business, is exceedingly small. It is more than probable that the Government contracts afford them negligible profits. They might be glad for relief from the business. Their services and their products are offered not for revenue only, but from patriotism.

I need only mention here the enormous assistance that the pharmacists as now taught and trained could be to medical men not alone along pharmaceutical, chemical, toxicological, bacteriological, but in X-ray and other lines. I have emphasized this in a paper published recently in the *New York Medical Journal*.

H. R. Bill 5531, introduced by Representative George W. Edmonds of Philadelphia in the House of Representatives on July 25, 1917, is an excellent and important one, and I believe that this bill covers the field comprehensively and creditably. Doubtless it may need amendment in technical military details to meet the needs of the Army and Navy.

I express the hope and believe that the "brief" filed with Surgeon General Gorgas by the pharmacists on August 10, 1917, will receive sympathetic attention. This extraordinarily able official could perform no act of public service more to the benefit of the medical department and his credit than the recognition of skilled, highly trained professional pharmacists, by supporting H. R. 5531 as an administration measure. His predecessor, Surgeon General Torney, had established the Dental Corps and the Veterinary Corps. It would be peculiarly fitting if Surgeon General Gorgas could have established the Pharmaceutical Corps.

STATE BOARD QUESTIONS.

Said to Have Been Given by the California Board of Pharmacy in October of This Year.

Chemistry.

1. Define atomic weight, radicle. How determine valency? What is Valency? How determine valency of a radicle?
2. What are the following: C_2H_4 ; K_2CO_3 ; Na_2CO_3 ; $KAl(SO_4)_2 \cdot 12H_2O$.
3. Give occurrence, atomic weight, symbol, forms in the store. How make each of sulphur?
4. Antimony, occurrence at weight, official forms, symbol.
5. Mercury, occurrence at weight, official forms, symbol. What two series of salts does it form? What other element acts the same?
6. Arsenic, occurrence at weight. Symbol? Official Forms? Per cent. of U. S. P. Preparations?
7. Give chemical tests for strychnine, morphine, quinine, codeine and water in alcohol.
8. What are the formulas for the following: Epsom salt; Potassium chlorate; Sodium chloride; Quick-silver; nitric acid; ammonium phosphate; hydrocyanic acid.
9. Antimony and potassium tartrate. Give another name. How make? Give reaction and dose.
10. Aether; specific gravity. Percentage; what is in it? Formula? How make? Show reaction.

Toxicology.

1. Give chemical antidote for lead water, oxalic acid, mercuric chloride, iodine.
2. Physiological antidote doses and how given for morphine, strychnine.
3. Doses of extract colocynth, extract digitalis, Lugol's solution, spirits chloroform.
4. Chemical antidotes for chloral and silver nitrate. What do they do?
5. What is the antidote for alkaloids? Why? What is the dose?
6. What are the chemical tests for strychnine, antipyrine and mercuric chloride?
7. How distinguish epsom salt from oxalic acid?
8. Name five poisonous tinctures and their doses.
9. Give metric doses of Donovan's solution; tincture opium; tincture strophanthus and Fluid Extract viburnum opulus.
10. Define Toxicology. Narcotic; corrosive; antagonist.

Pharmacy—Practical and Theoretical.

1. What is nitro hydrochloric acid? How made? Percentage of ingredients? Another name?
2. What are cerates? How do they differ from ointments? What ingredient do they all contain? Name six official.
3. How many official waters? Name three processes for making. How many by each process? Give two examples of each.
4. Express 15.43 grains in grams. Metric equivalent of 5, 9, 20 grams?
5. How much crude ipecac will it take to make one pound of fluid extract?
6. How much crude Belladonna to make one pint of tincture?
7. Change 60° F. to centigrade; 4° C. to Fahrenheit.
8. Give source of eugenol, salicylic acid, salicin, atropine.
9. Give ingredients in:
 - (a) Friar's Balsam.
 - (b) Tinc. cinchona comp.
 - (c) Citrine ointment.
 - (d) Antiseptic solution.
 - (e) Blaud mass.
 - (f) Syrup of iron iodide.
 - (g) Comp. syrup of hypophosphites.
 - (h) Neutralizing cordial.
10. How many grams in 12 oz. 3% solution of potassium permanganate?
11. Grams in 1 to 1500 solution of bichloride 500 cc?
12. Give Latin abbreviation and English name for Chartula, Haustis bis in

die, Collyrium, semi, mica Panis and ana.

13. Define pharmacy, calcination, deliquescence, efflorescence, incineration, lotion.
14. Dilute $2\frac{1}{2}$ gal. alcohol to 40%.
15. Criticize the following:

Menthol	iv gr.
Camphor	ii gr.
acetanilide	iii gr.

mitte tales doses.
misc. et fiat pulv. No. xii.

16. What is spirits of glonoin? Percentage strength? Use and dose?

Materia Medica.

Give official name, Part used, Dose, Use and official preparation of the following:

1. Pumpkin.
2. Aconite.
3. Marshmallow.
4. Anise.
5. Chamomile.
6. Asafoetida.
7. Indian Cannabis.
8. Peppermint.
9. Phytolacca.
10. Peruvian bark.

NEW PRICES.

Effective December first, please notice that "Analax" has been increased from 75c and \$2.00 per dozen, respectively for the trial and regular size to \$1.20 and \$2.40 per dozen. The retail prices have been increased from 10c and 25c, respectively, to 15c and 30c. McKesson & Robbins, the maker of this favorite preparation, announces that the increase in prices has been absolutely necessary because of the continued rise in prices of the drugs entering into the manufacture of "Analax." The druggist will, however, observe that the retail prices have been raised accordingly, so that he will not in any way be burdened by this new price list.

The McKesson & Robbins Co. believe firmly in fair play, and wish to impress upon the drug trade the increase in retail prices of the specialty "Analax."

On November the first they announced to the drug trade the increase in price of "Calox" tooth powder, and the drug trade has been generally unanimous in the praise of the manner in which this has been handled by the makers.

Pharmacists who are already well

stocked with these specialties of McKesson & Robbins will materially profit by the new increase in prices. Remember, these prices on "Analax" are effective from December first.

MARKET LETTER.

By F. W. DESSEL.

During the past few weeks the subject of the alcohol tax has been uppermost in the minds of the pharmacists. The rulings have been so numerous that even an expert in the office of Internal Revenues at times is confused. However, the wholesale houses are now able to furnish approximately the last word on regulations governing the sale of non-beverage alcohol. One of the annoying and expensive elements connected with it is the furnishing of a bond acceptable to the Government.

Since our last letter there has been no serious radical changes in the drug market. The majority of the proprietary articles are strong and several have been sharply increased in price. The narcotics with the exception of codeine are very strong and continuously rising. Codeine, however, dropped sharply from \$1 to \$1.50 per ounce owing to an unexpected British supply. The amount of opium on hand is comparatively small and accordingly morphine has increased \$1 going to approximately \$14. There has been considerable demand for export cocaine bringing the price in many instances as high as \$12 an ounce.

The following drugs have advanced: Phenol, quinine, salicylates, benzoic acid, saccharine, fats and oils, camphor and menthol, wax, oil of cloves, vanillin, chloroform, wood alcohol, bromides, iodine, potassium iodide, castor oil, flax seed, citric acid. Declined: Acetphenetidin, acetylsalicylic, alcohol, codeine.

WANTED—Position by Licentiate in Pharmacy; not subject to draft.

J. W. BIRCH,
Orland, Cal.



The above is a cut of F. W. Dessel's Pharmacy, recently modernized to be one of the finest stores in San Francisco.

SAN JOSE AND SANTA CLARA DRUGGISTS' BANQUET.

Thursday evening of last week the San Jose and Santa Clara Druggists held a banquet and special meeting at the La Molle Grill, for the purpose of arriving at a general understanding on the daily advances in prices in many articles handled by druggists, the Trading Stamp evil, Internal Revenue rulings, and on the sale of alcohol.

The meeting proved to be one of the most interesting and instructive ever held by the Druggists' Association.

The invited guests and speakers of the evening were Mr. J. T. W. Cobb of Coffin, Redington Co., Mr. Robert Weber of Langley & Michaels, and Mr. H. W. Bygott of the Owl Drug Co.

The following druggists were present: Messrs. Baker, Bressani, Coit,

C. W. Dove, L. Doerr, Johnston, Hamilton, Lyne, Moorhead, Fleming, Munson, Madden, Fernish, Noe, Barrington, McCarthy, Robb, Pellerano, Green.

Mr. B. Fernish acted as toastmaster.

SERUM TREATMENT OF PNEUMONIA.

Antipneumococcic Serum will be largely used during the coming winter. Pharmacists should, therefore, know the facts concerning Antipneumococcic Serum Polyvalent and Antipneumococcic Serum Type 1.

The treatment of pneumonia with Antipneumococcic Serum is not new. The serum was first produced by the H. K. Mulford Company nearly twenty years ago and this company was the first to offer it to the medical profession in this country.

Recent researches have shown that

there are three different fixed types and a fourth group of miscellaneous pneumococci, all of which may cause pneumonia, with a varying mortality percentage. It has been shown that serum produced by injecting horses with any one of the three fixed types of pneumococci is not potent against pneumonia caused by the other types.

Clinical reports show that pneumonia caused by Type I is most amenable to serum treatment while pneumonia caused by Types II and III does not respond to the same extent.

In Pneumonia caused by Type I the mortality has been reduced about 75 per cent. by use of serum.

It is impossible for a physician to know which type of pneumococcus is causing pneumonia unless he makes a laboratory diagnosis. This cannot always be done quickly. It follows, therefore, that a polyvalent serum, prepared by injecting horses with the three types of pneumococci simultaneously, and therefore containing antibodies against these three types is the most useful in the emergency serum treatment of lobar pneumonia. This serum is standardized against Type I Pneumococcus by animal protection tests. One cc. must protect against 500,000 fatal doses of Type I Cultures.

The H. K. Mulford Company has had on the market for some time such a polyvalent antipneumococcic serum which contains antibodies against Types I, II and III and is just as potent in its protective power against pneumonia caused by Type I as is the Type I serum which contains only antibodies against Type I. The administration of Mulford Polyvalent Antipneumococcic Serum should be commenced immediately upon diagnosis, for the patient is thus at once supplied with antibodies against three types. If laboratory diagnosis later shows the pneumonia to be due to Type I, it would still be of advantage to continue the polyvalent serum be-

cause it affords all the curative value possessed by the Type I serum, and in addition may guard against possible infections by Types II and III pneumococci. The H. K. Mulford Company furnishes both Polyvalent and Type I Antipneumococcic Serum, but it is clearly to the advantage of the patient as well as the physician to use the polyvalent serum.

Information as to how the Mulford Serums are furnished both for curative and diagnostic purposes is found in the advertisement of this firm on third cover page.

F. C. Moody, J. J. Spellman and F. L. Gibson, all of U. C. ex-'18, have recently been transferred from the training ship to transports upon the Pacific Coast. We shall expect shortly to get word that they have safely crossed the Atlantic.

J. M. Casselman on November 12th, was held up in his store at 402 Sutter street. He was bound and gagged. The robbers secured a gold watch and about thirty dollars in cash. They also secured the morphine.

OBITUARY.

THE PACIFIC PHARMACIST regrets to announce the death of Prof. Chas. Caspari, Jr., one of the most progressive pharmacists of this country. Like most teachers he died in the harness, continuing his work to the day before his death. Prof. Caspari was professor of pharmacy in the University of Maryland, and is the author of a well-known and extensively used text-book on Practice of Pharmacy. He was a good, whole-hearted, clean-cut man who always championed justice. He hated untruthfulness and never shrank from a duty, no matter how great or how small.

The science and art of pharmacy has lost a great champion and a good friend.

PERSONAL AND DRUG TRADE NEWS

By Our Special Correspondents

The illustrious Order of Brunifferies held the attention of those interested in the drug trade on the evening of November 14. The occasion was the "Arabian Nights" smoker and "Devil's Auction" given by the Acacia lodge at the Scottish Rite Hall. There was plenty of entertainment for everyone beginning at 8:30. There were vaudeville stunts, boxing matches, prize races, etc. Prizes were awarded for the latter. Refreshments and cigars were in abundance. These meetings prove that we are not acquainted with all in the drug trade and we are bound together in a firmer pack as a result of the Brunifferies.

The driving power of the evening was great and a vote of thanks should be awarded the entertainment committee.

Mr. F. Nutter is with the Owl Drug Company on Post and Grant avenue.

Miss L. Knickerbocker of Healdsburg has purchased the St. Peter's pharmacy on Twenty-first and Alabama streets.

Dr. Haselhurst formerly of Bowerman's has accepted a position with Lengfeld's on Fillmore street.

The British government has adopted a number of official preparations which need not be made according to their pharmacopoeia. These are called "war emergency formula" and must be plainly marked. The first one on the list is substituting for glycerine and sugar. It may be necessary for the United States to adopt such measures.

It is noted with interest that forty States are now members of the National Association of Boards of Pharmacy. These States all reciprocate

and anyone registered in one of these States may become registered in any other State in this list without examination.

F. Stanley has taken a job with the Sun Drug Co., on Haight street.

L. Munson, formerly of San Jose, is located at the Owl, Fillmore and Geary streets.

The Cutter laboratory are to construct a building at 2515 Seventh street costing \$19,000.

The Home Drug Co. are giving away a set of six premiums at each of their stores. The prizes which are to be awarded New Year's eve are an all leather handbag, library lamp, stationery, etc.

J. M. Jacobs is again with the Wakelee's laboratories on Third street after receiving exemption at Camp Lewis.

The Rees Pharmacy, Tenth and C streets, has been put in charge of W. Stocker.

Australia, France, Japan and Germany give high official rank to the heads of the Pharmaceutical Corps. It is to be hoped that Congress in its present session will give some recognition to pharmacists in the United States army.

Mr. Willis is back with Young & Casselman on Polk street, after an absence of a few months training in the Aviation Corps.

A fine ten-pound baby girl was recently born to Mr. and Mrs. Max Buchner of Buchner's Pharmacy, Twenty-ninth and Church streets.

A. D. F. I. CO. MEETS.

The regular quarterly meeting of the executive committee of the A. D. F. I. Co., was held in Cincinnati, November 23-24. All of the members of the committee were present at the meeting. Preliminary arrangements were made for the annual directors' and stockholders' meeting, which will take place on Tuesday and Wednesday, February 12-13.

The company's business was found to be making splendid progress. On October 1 it had in force insurance amounting to \$20,760,578.12 at a premium of \$219,845.63. During the first nine months of the year there was insurance written amounting to \$15,785,802.26 at a premium of \$165,021.25. The company now insures over 11,000 retail drug stores. The fire losses for the first nine months of the year after deducting re-insurance, amounted to \$39,580.27. The net expenses for the first nine months of the year amounted to \$47,284.13. On October 1, the assets of the company were \$511,048.09, with liabilities other than re-insurance of \$11,423.66. Re-insurance reserve amounted to \$89,330.53, leaving a surplus as to policyholders of \$410,293.90. Under the income tax, excess profits tax and tax on premiums, the company will be a very substantial contributor to the support of the Government. The executive committee had many important questions to consider incident to the continued growth of the company which is now regularly admitted to thirty-four of the States. It was decided to enter some additional States with the new year. During the first nine months of the year the company saved its policyholders in the cost of their insurance \$55,007.08, and since it has been in business it has saved its policyholders in the cost of their insurance \$391,083.27.

O. G. Bailey, U. C. ex-'18, is at the Naval Training Station at San Diego.

The many friends of "Pop" Eppenhimer, manager of Wakelee's Powell street store are indeed showing their appreciation since the recent arrival of the baby boy. He is being showered with congratulations. As presents wild ducks are much in evidence.

F. M. Smith is in charge of the Powell's drug store, Oakland.

The store known as Wilson's Pharmacy or the Hygienol Drug Co., at Clayton and Haight streets, has recently undergone some marked improvements. Mr. G. Wilson, proprietor, has leased the store adjoining and by so doing has enlarged his floor space considerably. The extra room will give him an opportunity to enlarge along many lines and take care of his rapidly increasing business.

Mr. Hugo Karnell, formerly with the Ferry Drug Co., is now located at Geary-Mason Pharmacy.

Representatives of the California Pharmaceutical Association, San Francisco Drug Clerks' Association, San Jose and Alameda County Drug Clerks' Association, State Board of Pharmacy, California College of Pharmacy, and Physicians and Surgeons Department of Pharmacy met at the Hof Brau for a luncheon on November 14. The purpose of their gathering was to formulate a plea to Congress emphasizing the position, usefulness and necessity of the pharmacists. The effect of the draft and the standing of the pharmacist in the army was the subject under discussion.

Captain J. G. Cummings, U. S. A., gave a very interesting lecture on the "wartime duties" of a druggist in the army before the California Drug Clerks' Association, November 23, in the Pacific Building. Dr. John Zeig also spoke on the use of disinfectants in the camp and on the battlefield.

Mr. McLone, a well known druggist from Seattle, has accepted a position with Wakelee's Polk and Sacramento streets store.

On Tuesday, November 20, the largest and most important chemical plant in Germany was destroyed. It was called the Grieshein Elektron and was located near Frankfort on the Main. It was caused by an explosion.

Miss V. Wright, affiliated with the State Board of Pharmacy, recently spent ten days of recreation at Lake Tahoe.

H. Davis of Pierron's Pharmacy, Union and Octavia streets, who enlisted in the Naval Reserves seven months ago, has been called and will report at San Pedro, December 14.

The St. Louis College of Pharmacy has awarded an associate professorship to William C. Bolm who will deliver lectures on commercial pharmacy.

McGowan's Pharmacy, Alabama and Twenty-fourth streets, has been placed in charge of W. C. Murphy, formerly located at the Castro Street Pharmacy.

FOR SALE

Four 6 x 8 foot oak show cases, modern.

Postal card rack and telephone booth. Bargain prices.

INQUIRE

DESSEL'S PHARMACY

1294 NINTH AVENUE

Phone Sunset 1024

P. Garibaldi, brother of A. Garibaldi of the Anchor Drug Co., paid a visit to his folks the latter part of November. This is the first visit since enlisting six months ago. He is now located at San Pedro.



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CODEINE
QUININE SULPHATE
MORPHINE SULPHATE
BISMUTH SUBNITRATE
POTASSIUM IODIDE
STRYCHNINE
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CHEMICALS

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*"Get behind Widemann—and
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DISPLAY PROMINENTLY



**Widemann's
Evaporated
Pure Goat Milk**

SOLD ONLY THROUGH
DRUGGISTS

*The Incomparable Baby Food
The Perfect Food for Invalids*

Tell the mothers about it and call it to the attention of the doctors.

Submit list of your customers, also birth list and we will urge their buying Goat Milk of you.

Call on us freely for literature, picture slides, free sample coupons, display matter, etc.

The medical profession is showing marked preference for our product, why not reap the benefit?

Widemann Goat Milk Co.

Physicians Bldg., San Francisco

Eli Lilly & Co. now have put out a new tablet which is known as Ipe-lax. A combination of A. B. & S. with five grains of Ipecac to each tablet. Besides being a laxative they are said to overcome intestinal disturbances.

R. Prouty, manager of the Seymour Drug Co. stores, enjoyed a hunting trip recently. He made Los Banos his first stop and sure made the ducks suffer.

It is now possible to obtain Atophan tablets without any trouble as they are being manufactured in New York in large quantities.

Mrs. J. F. Fox has opened a drug store at 2501 Bryant street, near Twenty-third.

A new general antiseptic consisting of aluminum and boric acid is being put on the market. It is said to be

favorable for application to the skin or mucous membrane.

G. Boman of Wakelee's is planning a much needed rest at Eureka during the holidays.

Digitalis rivaling that of Central Europe has been successfully produced in Oregon and Washington. This will be of great assistance to the war medical work.

A. Hammer, chief pharmacist in the navy, stationed at Mare Island, and also proprietor of the Naval Pharmacy of Vallejo, was recently married to Dr. Dora Dorn of San Francisco. Mr. Hammer was formerly on the United States ship "Olympia."

A victrola is to be awarded to the one holding the lucky number from each of the Wakelee's stores.

SOME OF "THE PACIFIC PHARMACIST'S" RECENT NEW SUBSCRIBERS.

C. L. Callis, Unice Cleary, Joe Dessel, H. L. Fletcher, H. Fink, Geo. J. Fortier, Harry Furlong, Francis J. Gliebe, A. F. Glaive, Philip S. Haley, R. M. Horton, A. D. Kaufmann, H. Kohnke, H. W. Koch, A. M. Kronberger, Chas. Lienan, Grechen M. Lusby, Earl Masson, W. H. Martin, A. Mastoras, A. McCumber, Sawaji Misawa, Richard Merry, Jr., S. Ninomiya, Will Norvell, W. Oldham, H. J. Olivi, E. A. Pelicano, H. L. Picetti, Hilda E. Pike, Arnold Piezzi, Rossi Drug Co., Gus. A. Ross, Bruce Scott, Ewell F. Scott, A. G. Steelman, Wm. Yard, W. A. Weisher, J. S. Whyte, A. L. Widing, Ray J. Winans, F. W. Young, LaMotte H. Stinson, A. W. Smith, H. F. Strickland, A. Adamsen, S. Gower, W. M. Hunter, G. C. Wentz, Brunswig Drug Co., E. A. Henderson, P. M. P. Merner, R. E. Parsons, Harry J. Girot, A. F. Peck, W. A. Wishart, L. J. Freeman, Fred Ventuleth, Robert Squires, Geo. C. Pedley, J. B. Soleim, E. G. Conn, C. S. Cain, Verna Rodda, Thos. T. Kushide, T. S. Whitmore, Geo. Schuh, H. B. Rooney, B. J. McDonough, H. D. Stewart, Merchants' Trade Journal, F. W. Harvey, N. W. Clinger, W. R. Iden, C. A. Nicholson, Bert Pennington, C. D. Kelly, I. L. Nason, Leo E. Schwartz, Atlanta Medical College, University of Nebraska, Merchants Trade Journal, Mrs. Price, Orient Commercial Company.

Mr. George Davies of the Harbor Pharmacy has taken up dancing and is learning the trots at Puckett's Academy.

**C. E. HAYWARD, MULFORD
COMPANY SUPERINTEND-
ENT, TWENTY-FIVE
YEARS IN SERVICE.**

Charles E. Hayward, general superintendent of the H. K. Mulford Company, recently celebrated the twenty-fifth anniversary of his connection with that firm, and was presented with a handsome gold watch, suitably engraved, at a meeting of the Board of Directors of the company, in recognition of his faithful service.

Mr. Hayward entered the employ of the H. K. Mulford Company just one year after its incorporation, when it was still located at 2132 Market street, Philadelphia. He was born in Cambridge, Maryland, and began his pharmaceutical career in the drug store of Dr. Thomas Williams of that locality. His first position with the H. K. Mulford Company was in the Granulating Department, where he assisted Mr. E. V. Pechin, secretary of the firm, who at that time was in charge of the manufacturing. In 1900 Mr. Hayward was placed in charge of the Tablet Department, and in 1901 he was made superintendent of the Pharmaceutical Laboratories. His characteristic thoroughness and familiarity with all the details of the growing business caused the officers of the company to make him general superintendent of the Biological as well as the Pharmaceutical Laboratories in 1909, and in 1913 he was elected a member of the Board of Directors.

When not engaged in speeding up production, Mr. Hayward finds recreation and pleasure in caring for his farm in Chester County and occasionally in helping the Mulford bowling team defeat its rivals in the Drug Trade Bowling League.

Dr. M. L. Lloyd, manager of the Home Drug Co., No. 2, spent a few days down the valley accompanied by his wife and child. While on their first stop he enjoyed a few trips after ducks, geese and jack rabbits. The result was very successful.

Fellows' Syrup

IMPORTANT NOTICE

This is to remind you that most sales of **FELLOWS' SYRUP OF HYPOPHOSPHITES** are made on Physicians' prescriptions, in which case the profit to the retail druggist is nearly 100%.

This means that the Physician sends you a desirable customer; and the least you can do is to treat him fairly, and supply the preparation prescribed, Fellows' Syrup.

Members of the retail drug trade are warned against buying or selling colorable imitations of the well-known yellow-wrapped package of Fellows' Syrup. The highest Courts have decided that such an act is an infringement of the Trade-Mark Law, and makes the offender liable to a suit for damages.

We think three cents is high for postage but in 1823 a letter of a single sheet cost six cents for thirty miles and so on up to twenty-five cents for letters over 400 miles.

Beginning January 1, 1918, the minimum salary for drug clerks as adopted by the California Drug Clerks' Association will be \$125 per month.

A. Rosenberg has taken a job with Wakelee's.

Mrs. Comper, wife of Mr. Comper, proprietor of the Crystal Pharmacy, has decided to take a course in pharmacy and has enrolled in one of the local colleges.

Speaking about scarcity of drug clerks, why not institute shorter hours? Fuel is high, clerks are scarce and light expensive.

Mr. Miller, a well-known druggist, is now with the Bahome Pharmacy, Sacramento and Kearny streets.

Modesto, Calif.,
Sept. 8th, 1917.

Widemann Goat Milk Co.,
307 Physicians' Bldg.,
San Francisco, Cal.

Gentlemen:

You may be pleased to know that I have had brilliant success with your GOAT MILK in feeding. In selected cases, which did poorly on cows' milk for any reason, I have used goats' milk, with very good results.

During the recent typhoid fever epidemic in Modesto goats' milk proved especially valuable.

I have fed my own baby on goats' milk for the past two months, and the results have been gratifying.

Very truly yours,

(Sgd.) J. W. MORGAN, M. D.
848 10th St.

All parcel-post packages taking over 25 cents postage must bear an internal revenue stamp, 1 cent for each 25 cents.

The former California Chemical Company of Santa Barbara has been reorganized and incorporated under the name of the Occidental Chemical Company in Oakland. The main purpose of this corporation is to produce potash from kelp.

A report from one of the leading journals which contains articles from a number of manufacturers such as Kondons, Fritzsche Bros., Dr. D. Jayne, Sharp & Dohme, Dr. Miles Medical Co., Abbott Laboratories and Hudnut's show the difficulties under which each of these firms is laboring. All their crude materials have advanced from 50 to 500 per cent. They are holding down the prices as much as possible but are sure to make a decided increase in prices now after the added tax on alcohol.

Egger is again making improvements. This time by enlarging his store by annexing the building adjoining. This will surely give a better

appearance to the store and will enable him to handle a larger and more widely varied stock.

Mr. Dart of Wakelee's Polk and Sacramento street store spent a few days on his ranch near Stockton. While there he enjoyed a dandy quail hunt.

Harpers contains an article which shows that America is not so slow in chemistry as one would be led to believe. We have the largest sulphuric acid industry in the world. This affects the manufacture of petroleum refining and explosives. Likewise we have the largest aluminum industry; calcium, carbide industry which leads to the production of acetylene gas and the oxyacetylene flame; also the electrolytic soda industry giving us chlorine and its many uses. Paper manufacture, artificial graphite, the photographic film and the leather industry are a few of the other lines in which we lead. There are hundreds of others but the ones mentioned serve as good examples.

Mr. C. Clark, representing the J. B. Williams' line is making a sojourn in the city.

If the war keeps up it is certain that many more will be in the army and navy before the Pharmaceutical convention in 1918. It is being suggested and discussed to Boards of Pharmacy to continue in good standing registered pharmacists who become members of the army or navy.

Miss McKinnon of Wakelee's on Polk street and friend gave a party for a "jazz" orchestra. All present spent a delightful musical evening. Dainty refreshments were served.

Among the many exports in the United States during the last month was several million dollars' worth of analine dyes. This shows how far necessity can go in creating new industry.

COLLEGE NEWS.

Miss Hilda Pike of the Senior Class is spending her spare time as an assistant to Miss Roehr in the Dispensary of the University Hospital.

F. Roper spent the week end with his folks at Napa, November 10th.

Phi Delta Chi Fraternity was honored by a visit from Emory Thurston, one of the Grand Officers of the Fraternity, and a member of the Omicron Chapter, University of Southern California. Mr. Thurston has recently accepted a position with Eli Lilly Co. He will be able to make frequent visits to the local chapter.

The college is in receipt of a communication from W. F. Sedgley, '14, who is applying for entrance into the Officers' Training School at Camp Lewis. Mr. Sedgley was president of the student body while in attendance at the college and held a very high rating. He had been managing one of The Owl Drug Company stores in Los Angeles until he was called. The Engineering Corps looked the best to him. He is now Supply Sergeant of an engineering train.

Miss U. C. Cleary is employed at Bowerman's Pharmacy, 6th avenue and Clement street.

Geo. Schuh spent the day in San Jose November 10th.

C. H. Vogelmann, ex-'18, now in the Hospital Department of the Army, spent a short time at the Kappa Psi House and also took in the Junior Dance, November 23rd.

The main topic at the Junior Class meetings during the past month has been their annual dance. This affair brought up many unthought-of discussions and occupied a good deal of time.

Hugh Selvey and C. Cain spent No-

vember 14th and 15th on a quail hunting trip in and about Christie, California.

The junior members of Phi Delta Chi Fraternity gave a house dance to their Seniors and ladies on the evening of November 14th. The decorations were carried out in blue and gold and pink carnations. A special smoking and lounging room was furnished with big, easy chairs and pillows, the walls were adorned with pennants and streamers. The music was very lively and inspiring. Dancing continued till a late hour. Those present, besides the active members, were: Dr. H. M. Simmons, Leland Taylor, Richard Grant, Ray Wilson and the Misses Betty Dorsey, F. Airleta, V. McMahon, Blossom Kilgore, Louise Howell, Genevieve Mitchell, S. Smith, A. Costella, C. Guerin, H. Torr, E. Feeney, E. Charonette and Mrs. R. Wilson.

R. Clark was down to see Serg. Wycoff, '17, at Monterey, November 18th.

R. J. Winans has moved into the Kappa Psi House.

The Junior Class informal was given November 23rd, at 2626 California street. The dance was a decided success even though many were unfortunate in not being able to attend because they were working. Dr. and Mrs. H. M. Simmons were in attendance. The music was full of life and the orchestra played a snappy program to sixteen dancers. The well-appointed reception rooms were used by those who desired punch or were tired of dancing. The patrons and patronesses were President Benjamin Ide Wheeler and wife, Dean F. T. Green, Dr. and Mrs. H. M. Simmons, Dr. and Mrs. A. Schneider, Dr. and Mrs. H. B. Carey and Prof. Nish. Ray Winans, President of the Class, acted as floor manager and was ably assisted in the dance by the other officers, Vice-President R. Horton, Secretary Miss U. Cleary, Treasurer H. Girot, Sergeant-at-Arms B. F. Scott; also R. Terry and W. F. Ward.

E. M. Henshaw from Oakdale, California, was up November 25th to arrange for entering college next fall.

Dr. Smith, who has been Ship Surgeon on one of the liners for the past four months, touching Japan, Philippine Islands and West Indies, has taken up residence for a short time at the Kappa Psi House. Smith is a member of that chapter at Atlanta, Georgia.

Geo. Austin, ex-'18, who until recently has been in the Naval Training Station here, has been transferred to an Eastern hospital.

F. Tostevin and J. Soleim entertained at dinner during November, Miss Z. Donahoe, V. Frazier, C. Cain, E. Conn, and H. Selvey.

W. M. Moody and G. Schuh with their ladies took in the Stanford-Santa Clara game November 24th. After the Stanford victory they returned to the city and enjoyed a dinner dance at the Palace Hotel.

Word was received by the college from Antonio P. Rosa, a special student in 1914. Mr. Rosa is now located on the Fanning Islands, Pacific Ocean, where he is Supervising Surgeon in an English colony. He enjoys the work immensely.

D. R. Hutchison attended the Junior prom. in Berkeley, November 24th. He reports about 250 couples present and due to the late starting of the dance and the entertainment it was only possible to dance thirteen of the eighteen dances. The dances were interspersed with fancy dancing and ukulele selections by a well known artist. Everyone had a wonderful time.

R. C. Knowlton has quit his college work and is putting in full time at The Owl Drug Co., 778 Market street, until he is called for active service.

Many of the students reported at

the "Home Base" November 29th, to spend Thanksgiving. Those who took part in the Turkey Trot were: C. Gibson, East Auburn; F. Roper, Napa; A. W. Deacon, Ukiah; D. Bagley, Ione; K. Farnsworth, Oakley; O. H. Kohnke, Lodi; C. L. Callis, Ukiah; E. M. Massoni, Healdsburg; N. Piezzi, Petaluma; L. Burns and R. Terry, Auburn; J. Soleim, Richmond; F. Spiekerman, Lodi; C. Parker, San Jose, and G. Fortier accompanied H. Fink to San Jose.

It is a gratification to those of us who spent the major portion of the year at the college to find that the foreground of our magnificent picture is being improved by the shovel, pick and scraper, in other words, Parnassus avenue is to be paved.

D. Grove, '12, is at Camp Lewis and has been recommended for the position of corporal.

H. J. Furlong has recently been pledged to Phi Delta Chi.

E. Scott spent most of the vacation in Oakland, where his folks were visiting with relatives.

Clem. Schuh was visiting his brother George at the Phi Delta Chi House recently.

D. F. Hutchinson has taken up dramatics as a sideline. His first appearance was in the Admen's Musical Comedy which was recently produced at the Savoy Theater.

Mrs. G. Lusby has accepted a position with Bowerman's, 238 Stockton street.

O. Tuttle spent a week-end in Santa Rosa the latter part of November.

H. M. Angell, '98, visited college on November 28th.

Joe Piuma spent a pleasant Thanksgiving in Palo Alto.

H. Harting from Grass Valley spent November 29th at the Kappa Psi House as a guest of D. Hutchison.

B. F. Scott has discontinued his work with the Juniors and has returned to his home in Upperlake.

O. W. Reynolds was surprised by a visit from his folks Thanksgiving. Reynolds returned home with them by auto and remained two days.

Miss Z. Donahoe spent two days at Stanford November 28th and 29th, and while there attended the Sophomore Cotillion and the Theta Xi's formal dinner dance. Returning Friday, Miss Donahoe spent the remainder of the time as a guest of Miss V. Frazier in Berkeley.

Twelve Seniors and four Juniors have decided to try the State Board in January. The main reason that so many have the fever is that the Board of Pharmacy has been asking the majority of them to take out temporary papers so as to legalize their positions until January.

Emil Norwood is now located at Camp Lewis teaching Materia Medica, Pharmacy and Chemistry under Capt. Dowdall, who gave first aid work at the college last session.

F. Spiekerman motored home with H. Fink to San Jose December 2nd. They report a pleasant drive.

Geo. Murphy, Ph. C. '17, is out of the pharmacist's life for a while and is now working on the ranch.

G. Affleck was up from Stanford December 2nd, and visited at Kappa Psi.

Prof. F. T. Green spent the first Sunday in December with his daughter in Berkeley.

Joe Bush spent a day in Richmond recently.

Geo. Schuh and F. Spiekerman enjoyed a sumptuous Thanksgiving dinner at the Hof Brau.

Miss Z. Donahoe settled a bet which she lost over the State Board examination by a theatre party at the Orpheum, November 26. Those present besides Miss Donahoe were Miss V. Frazier, S. Ivie and F. Tostevin.

H. Palmateer took Thanksgiving dinner at the Kappa Psi House.

Examinations were held during the week of December 10 in all subjects. This closes the work for the second part and the first semester. Christmas vacation extends from December 16 to January 7. Some will return to their homes while others will hold on to their jobs in the city.

MILITARY INFORMATION

A military information office to assist prospective applicants for entrance into the military and naval forces of the United States has been established in 114 California Hall. Application for other lines of civic and government work may be filed here also. The office is the headquarters of the various University committees assisting in the preparedness movement. Office hours of L. J. Richardson, Associate Professor of Latin, manager of the office, are 11-12 a. m. Monday, Wednesday, Friday, and Saturday; J. R. Douglas, Associate Manager, Tuesdays and Thursdays, 11-12 a. m.

Mr. Devoin of Vivaudous line and wife are in the city for two weeks.

CONGRESSMAN EDMONDS ADDRESSES NATIONAL PHARMACEUTICAL SERVICE ASSOCIATION.

Congressman George W. Edmonds delivered an interesting address at the regular monthly meeting of the National Pharmaceutical Service Association, held at the Philadelphia College of Pharmacy, on Tuesday evening, November 13th. He stated that his principal object in coming to the meeting was to hear the comments of pharmacists on the proposed bill, and to secure information which would aid him in urging its passage by Congress, and that he was very glad to say a word of encouragement to those laboring for recognition of pharmacists in the Government service. Mr. Edmonds referred to the days when he was a student at the Philadelphia College of Pharmacy, and said that one of the strongest arguments that could be put forth in favor of recognition of pharmacists in the Army was that they are compelled to spend almost as much time in properly fitting themselves for their profession as are physicians, dentists, and veterinarians. In other words, they deserve recognition as much as do the members of their sister profession. Congressman Edmonds urged the members to see that Congress be made familiar with the existing situation and with the provisions of the Edmonds bill. He also impressed on the meeting that a strong committee, composed of representatives of the various divisions of the drug trade, must be sent to Washington, when a hearing is given on the Edmonds bill by the House and Senate Committee on Military Affairs.

Dr. J. Madison Taylor made a strong appeal for recognition of pharmacists in his address, "The Triple Alliance in Military Medicine." He stated that the domain of military medicine is a blend of three major subjects: medicine, dentistry and pharmacy, with sanitation and hygiene as essential factors of each;

veterinary surgery as a branch. There can be no question but that each is on a practical parallel with the other in the best they aim to achieve. He declared that it would be particularly fitting for Surgeon General Gorgas to recommend the creation of a Pharmaceutical Corps, inasmuch as his distinguished predecessors had recommended the formation of a dental corps and a veterinary corps.

Dr. F. E. Stewart read a paper entitled "Proposed Organization of Units for Promoting a Bill before Congress Known as the Edmonds Bill for Securing an Army Pharmaceutical Corps." In this paper, he emphasized the necessity for showing the Government the value of a Pharmaceutical Corps, and he felt that the best way of doing this was to organize such corps at the different colleges and among associations of pharmacists throughout the United States, who could be trained to step in whenever the Government needed them. This paper was first discussed by Dr. John R. Minehart, dean, Department of Pharmacy, Temple University, who spoke of the military drill which was in vogue at the University he represented. He urged that graduates, as well as students of pharmacy, be impressed with the necessity of taking extra courses in sanitary subjects, so as to be fitted as physicians' assistants when the country calls them to service.

As a result of the foregoing discussions, the following resolution was unanimously passed:

Resolved, That it is the sense of this meeting that we favor the suggestion that additions be made to the courses of instruction in colleges of pharmacy when needed to meet the requirements of the Medical Service of the Army and Navy.

Dr. Samuel P. Stout, after discussing the value of the co-operation of the pharmacist in the success of the medical work of the Army, moved that the physicians be asked to co-operate in the movement to secure commissions for pharmacists and that representatives

of the medical profession be appointed on the committee which represents the case of the pharmacist at the hearing of the bill before the Committee on Military Affairs.

One of the interesting features of the program was the presence of five men in uniform, two of whom were called upon to speak. Private F. E. Berridge of the Post Hospital connected with the Medical Department of Fort Totten, related some of his experiences as a pharmacist in the Medical Department of the Army.

A very gratifying report as to new members was made by the Secretary, 109 having been added to the list during the month.

The Treasurer's report showed a balance of \$155.85, after all bills had been paid.

Applications for membership should be sent to the Secretary, Robert P. Fischelis, 828 N. Fifth street, Philadelphia, Pa. Pharmacists now in the service are also urged to send their names and addresses to the Secretary so that if the Pharmaceutical Corps is organized, they may be referred to the proper authorities.

ANTIMONY IN ALASKA.

During the last year \$74,000 worth of antimony was mined and shipped from Alaska. Stibnite, the sulphide of antimony, has been noted in 67 different places in Alaska. At present the ore coming from the Fairbanks and Nome districts seems to be the richest in the metal.

The entomologists of the Department of Agriculture have discovered that sodium fluoride is a most effective destroyer of lice on chickens. One pound of this inexpensive powder is enough to treat one hundred fowls, if dusted on in the proper manner. When dissolved in water and used as a dip, it will go two or three times further.

Faith.

"Oh, doctor, I have sent for you, certainly; still, I must confess that I have not the slightest faith in modern medical science."

"Well," said the doctor, "that doesn't matter in the least. You see, a mule has no faith in the veterinary surgeon, and yet he cures him all the same."—Sacred Heart Review.

METRIC WEIGHT AND APOTHECARIES' EQUIVALENTS

Grammes	Grains	Grammes	Grains	Grammes	Grains	Grammes	Grains
0.001	= 1/64	0.04	= 2/3	0.6	= 9	10.	= 154.3
0.0015	= 1/40	0.05	= 3/4	0.65	= 10	15.	= 231.3
0.002	= 1/32	0.065	= 1	0.7	= 10.8	20.	= 308.6
0.003	= 1/20	0.08	= 1 1/4	0.8	= 12	25.	= 385.8
0.004	= 1/16	0.1	= 1 1/2	1.0	= 15.432	30.	= 463
0.005	= 1/12	0.15	= 2 1/4	1.5	= 23	40.	= 617.3
0.006	= 1/10	0.2	= 3	2.	= 30.8	50.	= 771.6
0.008	= 1/8	0.25	= 3 3/4	4.	= 61.5	60.	= 926
0.01	= 1/6	0.3	= 4 1/2	5.	= 77		
0.015	= 1/4	0.4	= 6	6.	= 92.5		
0.03	= 1/2	0.5	= 7 1/2	8.	= 123.4		

METRIC MEASURE AND ITS EQUIVALENT IN APOTHECARIES' MEASURE

Mil.	Mil.	Mil.	Mil.
0.06 = 1 minim	2 = 32.4 minims	40 = 1.3 fluidounces	300 = 10.14 fluidounces
0.1 = 1.5 minims	3 = 48.6 "	45 = 1.5 "	400 = 13.53 "
0.2 = 3 "	4 = 64.8 "	50 = 1.7 "	473 = 16 (1 pt.) "
0.3 = 5 "	5 = 1.35 fluidrachms	60 = 2 "	500 = 16.90 "
0.4 = 6 "	6 = 1.62 "	70 = 2.3 "	600 = 20.30 "
0.5 = 8 "	8 = 2.16 "	75 = 2.53 "	700 = 23.67 "
0.6 = 10 "	10 = 2.71 "	90 = 3 "	750 = 25.36 "
0.7 = 11 "	15 = 4 "	100 = 3.38 "	800 = 27 "
0.8 = 12 "	20 = 5.42 "	120 = 4 "	900 = 30.43 "
0.9 = 14 "	25 = 6.75 "	150 = 5 "	1000 = 33.81 "
1 = 16.2 "	30 = 1 fluidounce	200 = 6.75 "	(= 1 liter)

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DRUG STORE for sale in San Francisco, located on good business corner. Large prescription business, well established. Price \$6500.

DRUG STORE, Siskiyou County. Stock, fixtures and building at a bargain for \$1800. Splendid opportunity for a man with small capital to secure a business and a home.

If interested in the above list of business opportunities, address F. A. Weck Drug Store Exchange, 501 Third avenue, San Francisco, Cal.

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EXCHANGE—For a good paying Drug Store in a prosperous town, anywhere in California, country preferred, 50 by 140 ft. lot, in fine residential district of San Diego, or 160 acre ranch, uncultivated, with plenty of water, six miles west of Ramona. If interested, write to: W. F. Belcourt, Druggist, Angels Camp, Cal.

WANTED—To hear from owner of good drug store for sale. Send price and full particulars to D. F. Bush, Minneapolis, Minn.

SPECIAL ATTENTION—If you want to sell your drug store, or buy one in any State, or want any kind of position, or need any kind of an employee, or need a Doctor, Dentist or Veterinarian, write F. V. Kniest, R. P., Bee Bldg., Omaha, Nebr. Estab. 1904.

The F. A. Weck Drug Store Exchange, 501 Third avenue, San Francisco, submits the following:

WANT TO BUY a paying drug store in a live town, value \$4000 to \$8000. If you have a good proposition we have a cash customer. F. A. Weck Drug Store Exchange, 501 Third avenue, San Francisco, Cal.

DRUG STORE in the Mission District. Cheap rent. Price, \$4500.

DRUG STORE, modern fixtures and clean stock, owner must sell, will take 25 per cent. under invoice cost. Stock and fixtures could be removed to new location if desired.

DRUG STORE for sale, San Francisco, \$3000. Small store, located on a prominent street in the business center, doing a good business. Will stand investigation.

DRUG STORE for sale, San Francisco, \$4000. On prominent business corner, Richmond District; modern fixtures, clean stock, doing good business; owner wanting to leave State is the only reason for offering store for sale. This is an exceptionally good offer for any live druggist.

DRUG STORE in Santa Clara Co. Modern fixtures and clean stock. Invoiced at \$11,000. Want a cash offer or would consider improved city real estate in exchange.

DRUG STORE for sale, San Jose, \$3000. Good location, clean stock, good business and small expenses.

SMALL DRUG STORE in San Jose doing fair business and improving. Owner in ill health and must retire. Stock and fixtures valued at \$1600.

DRUG STORE in Santa Cruz, clean stock and up-to-date fixtures—Will sell at inventory or lump sum. Some terms if required.

DRUG STORE for sale in Marin Co., \$7000. First-class, up-to-date store; good business, old established and well organized; located in an ideal home town.

DRUG STORE for sale in Los Angeles, \$6500. Up-to-date store with many specialties, affording good profits. Good reason for wanting to sell.

DRUG STORE for sale, Sacramento, \$8000. Money-making business, well established and good location. Good opportunity for a live man with sufficient capital.

DRUG STORE for sale. One of the finest in California—in a city south of San Francisco. Population nine thousand; store up-to-date; new and clean stock; good reason for wanting to sell. Price \$5500. Will take half cash and good security for balance. F. A. Weck Drug Store Exchange, 501 Third Ave., San Francisco, Cal.

DRUG STORE for sale in Santa Cruz Co., \$2000. Old established drug store in one of the best towns in California. Good opportunity for active man. Owner wants to retire on account of old age.

DRUG STORE for sale in San Francisco, located on good business corner. Large prescription business, well established. Price \$6500.

DRUG STORE in San Mateo County. Up to date in every particular; doing good business and large prescription trade. Owner compelled to change his residence on account of ill health. Will invoice stock and appraise fixtures. Good prescription future. Value \$5500.

DRUG STORE in San Francisco, busy corner on car line. Fine location for a physician; part cash and terms can be had.

DRUG STORE, San Francisco, outside district in fast-growing section. Owner in ill health, must sell. \$600 required. Good chance to increase stock and build up good business.

LOCATION for a drug store in a thriving town, near San Francisco, located on the main street in a modern new brick building. Low rent and a lease can be obtained if desired. This is an exceptional opportunity for a live druggist wanting to open a new store or to move from some other location.

DRUG STORE in San Francisco, good corner, doing good business. Owner has other business. Price, \$6500.

SAN FRANCISCO; thickly settled section, good business and large prescription trade with side lines. Owner has other business. Price \$6500.

DRUG STORE in Butte County, good business, low rent and small expense. Price, \$5000.

DRUG STORE, Eureka, Cal. In the center of the city; modern fixtures; doing good business; owner has other interests. Eureka is a fast-growing city of 2000 population; good business the whole year. Price, \$7,000.

NEVADA COUNTY. Store doing large prescription business. Rexall and Eastman's agency. Good all the year business; summer and winter resorts. Price, \$5,500.

PLACER COUNTY. Store carrying large stock; everything up-to-date. Owner has other business and wants to concentrate. Price, \$14,500.

ALAMEDA. Up-to-date fixtures and clean stock; big business; not anxious to sell, but would consider a fair offer.

SAN JOSE, CAL. Old established business; modern fixtures and doing good business. Price, \$10,000.

DRUG STORE in San Diego county, in good town and beautiful valley, doing nice business. \$2800.

DRUG STORE, San Francisco, Mission District. Modern fixtures, clean stock, good business. Good reason for selling. \$7000.

DRUG STORE in Oregon town (county seat). Owner must sell on account of ill health. Will sacrifice stock, \$3500. This is an exceptional opportunity for an active man—only drug store in town, also fine residence at \$4000 optional, may consider clear real estate exchange.

DRUG STORE in San Jose, Cal. Clean stock, modern fixtures. Owner will sell at discount from inventory as other business requires his attention.

DRUG STORE in San Jose suburban residence district; owner in ill health. Will sell for \$1600. Make offer.

DRUG STORE in Sacramento County, good town; owner wants to retire on account of old age. Good opening for doctor-druggist. \$2500.

DRUG STORE, Siskiyou County. Stock, fixtures and building at a bargain for \$1800. Splendid opportunity for a man with small capital to secure a business and a home.

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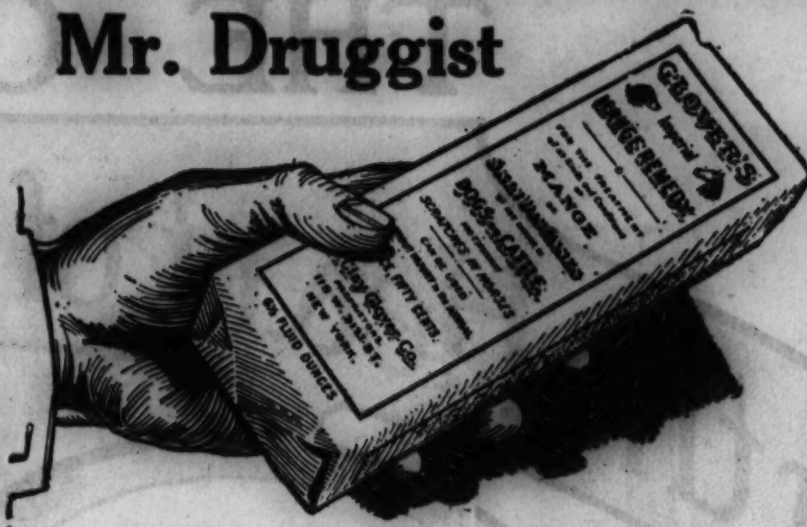
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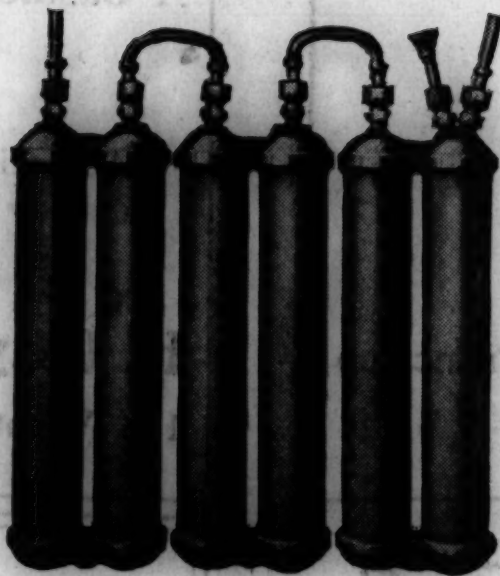
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For the Specific Treatment of Lobar Pneumonia

Lobar pneumonia is caused chiefly by the pneumococcus, of which there are three different fixed types and a fourth group, including possibly twelve different types.

Types I and II are responsible for about 70 per cent of cases, with an average mortality, without serum treatment, of from 25 to 30 per cent. With serum treatment the mortality of Type I has been reduced to from 5 to 8 per cent.

Type III is responsible for from 10 to 15 per cent of cases, with a death rate of 50 per cent.

Group IV is responsible for from 15 to 20 per cent of cases. These usually follow a milder course, only 10 to 15 per cent resulting fatally.

Mulford Antipneumococcic Serum Polyvalent is highly protective against pneumonia caused by Type I, and contains antibodies against Types II and III.

The serum is tested and standardized by tests on mice; 1 c.c. must protect against 500,000 fatal doses of Type I cultures.

The polyvalent serum should be used immediately on diagnosis of lobar pneumonia where type determination is impossible.

The dose is from 50 to 100 mils (c.c.) intravenously, repeated about every six to eight hours until the patient successfully passes the crisis. Most cases will require 300 mils (c.c.) or more. It is safe to administer the serum intravenously in large and repeated doses. When the serum is injected intramuscularly, the results are slower and less effective.

Mulford Antipneumococcic Serums are furnished in packages containing syringes of 20 mils (c.c.) each, and in ampuls of 50 mils (c.c.) for intravenous injection.

Mulford Specific Agglutinating Pneumococcic Serums for laboratory diagnosis are furnished for each of the three types, in 10-mil (c.c.) ampuls sufficient for about 20 tests.

Mulford Pneumo-Serobacterin Mixed is an efficient prophylactic against lobar pneumonia. It is supplied in packages of four graduated syringes, A, B, C, D strength, and in syringes of D strength separately.

Syringe A 250 million killed sensitized bacteria
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Phylacogens. Rheumatism Phylacogen, Pneumonia Phylacogen, Gonorrhea Phylacogen, Typhoid Phylacogen, Erysipelas Phylacogen, Mixed Infection Phylacogen. (10-mil bulbs, one in a package; 1-mil bulbs, five in a package.)

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